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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/820,778	03/30/2001	Hiroshi Nagasawa	NAGASAWA=5	3579

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EXAMINER

SIEW, JEFFREY

ART UNIT	PAPER NUMBER
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1637

DATE MAILED: 05/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/820,778

Applicant(s)

NAGASAWA ET AL.

Examiner

Jeffrey Siew

Art Unit

1637

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 32-93 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 32-93 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/20/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Art Unit: 1637

DETAILED ACTION

1. The response has canceled claims 1-31 and added new claims 32-93 which are to be examined.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 32-35,39, 40 ,41,44,45,46, 48-51,54-57,60-62,64-66,70-72 & 75-77,79,80,85-88 & 90-93 are rejected under 35 U.S.C. 102(b) as being anticipated by Findlay et al (Us5,514,550 May 7, 1996).

Findlay et al teach reactive probe chip with a plurality probes on a porous carrier where the first reactive substance is immobilized within pores and capable of binding to target molecule, a second carrier probe immobilized within pores of carrier where the second reactive substance is capable of bonding to second target molecule, a substrate material and carrier probes are immobilized on surface of substrate material(see whole doc. esp. col.5 line25-41 & col. 6 lines1-19 & figures 2-4). They teach oligonucleotide attachment (see col. 6 line 43) and they teach the probes may be the same or different (see col. 6 line 12). They teach a plurality of

Art Unit: 1637

microcompartments (see Figure 4). They teach porous substrate may be test slides which are glass, cellulose membrane (see col. 60-65).

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 32-35,39, 40 ,41,44-51,54-57,60-66,70-72 & 75-78,79-81,84-87 & 90-93 are rejected under 35 U.S.C. 102(e) as being anticipated by Choong et al (US6,238,909 May 29, 2001).

Choong et al teach reactive probe chip with a plurality probes on a porous carrier where the first reactive substance is immobilized within pores and capable of binding to target molecule, a second carrier probe immobilized within pores of carrier where the second reactive substance is capable of bonding to second target molecule, a substrate material and carrier probes are immobilized on surface of substrate material(see whole doc. esp. col. 111 line 15-20 & Figure 1 & 2). They teach oligonucleotides immobilized within porous substrate (see col. 11 lines 15-19). The teach substrates that porous carrier may be silica gel, , sol gel or SiO matrix

Art Unit: 1637

(see col. 5 line 55-60). They teach the matrix may be arranged in microlocations in two dimensional array from one to hundreds of thousands (see col. 6 line 30-40). Microlocations may be 5 to 500 microns in size (see col. 6 line 60-64). They teach that the probe may be extended by covalent attachment using template directed extension (see col. 5 line 10-15).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 36,37,42,43,52,53,58,59, 67,68, 73,74,82,83,88 & 89 are rejected under 35 U.S.C. 103(a) as being unpatentable over Choong et al (US6,238,909 May 29, 2001).

The teachings of Choong et al are described previously.

Choong et al do not explicitly teach pore size.

One of ordinary skill in the art would have been motivated to optimize the pore size in Choong et al's porous carrier in order to increase the surface binding area. It was well known that pore size increases the surface area of binding of probes of microbeads. It would have been prima facie obvious to optimize the pore size within the nanometer range in order to increase the surface area of the Choong et al's porous carrier to increase the concentration of bound probes.

Art Unit: 1637

5. Claims 38, 54,69 & 84 are rejected under 35 U.S.C. 103(a) as being unpatentable over Findlay et al (US5,514,550 May 7, 1996) or Choong et al (US6,238,909 May 29, 2001) either in view of McGarry et al (US6,569,674 May 27, 2003).

The teachings of Findlay et al and Choong et al are described previously.

Neither Findlay or Choong teach adhesive.

McGarry et al teach the use of adhesive for affixing layers onto substrate (see whole doc. esp. abstract & col. 6 line 66).

One of ordinary skill in the art would have been motivated to apply McGarry et al's adhesive to Findlay or Choong et al's array in order to bond the porous carrier onto the substrate. The use of adhesive securely fastens layers onto a desired position on the substrate. It would have been prima facie obvious to apply McGarry et al's adhesive to Findlay or Choong et al's array in order to securely fasten the porous carrier onto the substrate.

SUMMARY

6. **No claims allowed.**

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 1637

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

CONCLUSION

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey Siew who can be reached at 571-272-0787. The e-mail address is Jeffrey.Siew@uspto.gov. However, the office cannot guarantee security through the e-mail system nor should official papers be transmitted through this route. The examiner is on flexible schedule and can best be reached on weekdays from 6:30 a.m. to 3 p.m. If attempts to reach the examiner are unsuccessful, the examiner's supervisor, Gary Benzion, can be reached on (571)272-0782.

Any inquiry of a general nature, matching or filed papers or relating to the status of this application or proceeding should be directed to the Tracey Johnson for Art Unit 1637 whose telephone number is (571)272-0534.

Art Unit: 1637

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Papers related to this application may be submitted to Group 1600 by facsimile transmission. Papers should be faxed to Group 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The 1600 Tech Center FAX is (703)-872-9306.


JEFFREY SIEW
PRIMARY EXAMINER

May 17, 2004